UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,325	10/29/2003	Xianlong Luo	9896-000010	6551

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SIKRI, ANISH

ART UNIT	PAPER NUMBER
2143	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/696,325	LUO, XIANLONG
	Examiner	Art Unit	
	Anish Sikri	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 October 2003</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-9</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-9</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No.

02150111.4, filed on 11/02/2002.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a

foreign country or in public use or on sale in this country, more than one year

prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6 is rejected under 35 U.S.C. 102(b) as being unpatentable over

Zinin et al (US Pat 6,820,134).

Consider **Claim 1** Zinin et al clearly discloses the method for calculating

constrained paths for a transmission network, comprising: a. respectively collecting

attribute information of the link to which each node is connected and obtaining the

information of the protect entity to which the link belongs (Zinin et al, Col 2, Lines 12-20,

Lines 34-40, Col 3, Lines 31-42); b. flooding the collected attribute information to other

nodes according to a protocol (Zinin et al, Col 3, Lines 52-55); c. combining each node

according to the information of the protection entities to which each link respectively

belongs and forming the topology structure of each protection entity of whole network

and related link attribute information (Zinin et al, Col 7 Lines 20-31); and d. calculating

constrained paths for the transmission network (Zinin et al, Col 5, Lines 46-58). The

invention clearly shows on how the best paths for transmission is calculated by

collecting the attributes of nodes via their links, along with flooding the links to the nodes

if more than one best link is available, in order to further determine the best link

possible. The collected information between the links and their nodes is maintained by

various data structures by the router(s).

Consider **Claim 2**, Zinin et al clearly discloses the method of claim 1, Step a

further comprising the step of obtaining the usable bandwidth of link (Zinin et al, Col 4

Lines 25-27), the protection capability of link (Zinin et al, Col 6, Lines 31-49), the local

interface IP address and the remote interface IP address of link (Zinin et al, Col 5 Lines

25-26, Lines 55-56, Lines 63-67, Col 1-5). It is clearly disclosed that bandwidth,

reliability and IP addresses is maintained by the router to ensure proper

communication/transmission in the network.

Consider **Claim 5**, Zinin et al clearly discloses the method of claim 1, wherein

said protocol in Step b is the Open Shortest Path First (OSPF) protocol (Zinin et al, Col

4 Lines 25-26). It clearly shows that the network will use the OSPF protocol for

communication/transmission.

Consider **Claim 6**, Zinin et al clearly discloses the method of claim 1, wherein

flooding the collected attribute information to other nodes according to a protocol in Step

b (Zinin et al, Col 3, Lines 52-55) is through the packets of Link State Advertisement

(LSA) (Zinin et al, Col 7, Lines 20-24). It is clearly discloses that the flooding will be

conducted with the use of a LSA.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed

or described as set forth in section 102 of this title, if the differences between the

subject matter sought to be patented and the prior art are such that the subject

matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was

made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.

2.   Ascertaining the differences between the prior art and the claims at issue.

3.   Resolving the level of ordinary skill in the pertinent art.

4.   Considering objective evidence present in the application indicating

       obviousness or nonobviousness.

Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zinin et al (US Pat 6,820,134), in view of Saleh (US Pat 7,002,917).

Consider **Claim 3**, Zinin et al clearly discloses the method of claim 2, collecting

attribute information of the link to which each node is connected in Step a (Zinin et al,

Col 2, Lines 12-20, Lines 34-40, Col 3, Lines 31-42).

But Zinin et al fails to disclose the step of interrogating the user configuration

information of optical network devices through a specific software interface.

Nonetheless, Saleh discloses the step of interrogating the user configuration

information of optical network devices (Saleh, Col 1, Lines 66-65) through a specific

software interface (Saleh, Col 7, Lines 35-39). Therefore, it would be obvious to a

person of ordinary skill in the art at the time of the invention was made to allow the use

of a user to configure, taught by Saleh, to configure the optical network, for the purpose

of maintaining the optical network., in the invention of Zinin et al.

Consider **Claim 4**, Zinin et al clearly discloses the method of claim 1, collecting

attribute information of the link to which each node is connected in Step a (Zinin et al,

Col 2, Lines 12-20, Lines 34-40, Col 3, Lines 31-42).

But Zinin et al fails to disclose the step of interrogating the user configuration

information of optical network devices through a specific software interface.

Nonetheless, Saleh discloses the step of interrogating the user

configuration information of optical network devices (Saleh, Col 1, Lines 66-65) through

a specific software interface (Saleh, Col 7, Lines 35-39). Therefore, it would be obvious

to a person of ordinary skill in the art at the time of the invention was made to allow the

use of a user to configure, taught by Saleh, to configure the optical network, for the

purpose of maintaining the optical network, in the invention of Zinin et al.

Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin

et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284).

Consider **Claim 7**, Zinin et al fails to disclose the method of claim 1, wherein

Step d comprises: d1. establishing PATHS for storing the information of the shortest

path tree and TENT for storing the information of tentative nodes which have been

attempted before finding the shorted path; d2. putting the node doing the calculation on

PATHS, and pre-loading TENT from the local adjacency database; d3. examining links

from the node to each of its neighbor nodes when putting the node on PATHS, if a

neighbor node is already in PATHS, then ignoring this new way because it is longer; if a

neighbor node is in TENT and the new path is shorter, replacing the old path with the

new one; if the new path is the same length as the one in TENT, then the neighbor node

having an equivalent path; if a neighbor node is not in TENT, then deleting links and

nodes that do not satisfy the LSP constraint conditions and putting nodes respectively

corresponding to links which satisfy the LSP constraint conditions on TENT; d4. putting

the nodes with least-cost from TENT to PATHS; and d5. ending the routing calculating until TENT is empty or the destination node is already existed in PATHS

Nonetheless, Houston et al clearly discloses the method of claim 1, wherein Step d comprises: d1. establishing PATHS for storing the information of the shortest path tree and TENT for storing the information of tentative nodes which have been attempted before finding the shorted path (Houston et al, Page 3, [0039]); d2. putting the node doing the calculation on PATHS, and pre-loading TENT from the local adjacency database (Houston et al, Page 3, [0040]); d3. examining links from the node to each of its neighbor nodes when putting the node on PATHS (Houston et al, Page 4-Page 5 [0051]), if a neighbor node is already in PATHS (Houston et al, Page 4-Page 5 [0051]), then ignoring this new way because it is longer (Houston et al, Page 4-Page 5 [0051]); if a neighbor node is in TENT and the new path is shorter (Houston et al, Page 4-Page 5 [0051]), replacing the old path with the new one (Houston et al, Page 4-Page 5 [0051]); if the new path is the same length as the one in TENT (Houston et al, Page 4-Page 5 [0051]), then the neighbor node having an equivalent path (Houston et al, Page 4-Page 5 [0051]); if a neighbor node is not in TENT (Houston et al, Page 4-Page 5 [0051]), then deleting links and nodes that do not satisfy the LSP constraint conditions and putting nodes respectively corresponding to links which satisfy the LSP constraint conditions on TENT (Houston et al, Page 4-Page 5 [0051]); d4. putting the nodes with least-cost from TENT to PATHS (Houston et al, Page 5 [0054]); and d5. ending the routing calculating until TENT is empty or the destination node is already existed in PATHS (Houston et al, Page 6 [0059]).

Therefore, it would be obvious to a person of ordinary skill in the art at the time of

the invention was made to allow the use PATHS for storing the information of the

shortest path tree and TENT for storing the information of nodes, taught by Houston et

al, in the invention of Zinin et al for the purpose of finding the best shortest path

between nodes for creating an efficient transmission path.

Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin

et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284), and further

in in view of Goertz (US Pat 4,755,991), and Saleh (US Pat 7,002,917).

Consider **Claim 8**, Zinin et al, in view of Houston et al, discloses the method of

claim 7, further comprising the steps of: d6. selecting the most appropriate path

according to a policy if equal-cost paths exist (Houston et al, Page 4-Page 5 [0051]);

But Zinin et al, in view of Houston et al, fails to disclose d7. allocating a

congruent time-slot to all nodes on this multiplex section protection (MSP) ring if the

service passes a MSP ring.

Nonetheless, Goertz discloses d7. allocating a congruent time-slot to all nodes

on this multiplex section protection (MSP) ring if the service passes a MSP ring (Goertz,

Col 1, Lines 65-68, Col 2 Lines 1-5).

But Zinin et al, in view of Houston et al fails to disclose the step d8. if it is

necessary to output protection paths simultaneously, outputting the protection paths

based on the SDH/SONET protection topology according to the features of protection

ring.

Nonetheless, Saleh clearly discloses the step d8. if it is necessary to output

protection paths simultaneously, outputting the protection paths (Saleh, Col 27, lines 25-

41) based on the SDH/SONET (Saleh, Col 5, Lines 31-32) protection topology

according to the features of protection ring (Saleh, Col 27, lines 25-41).

Therefore, it would be obvious to a person of ordinary skill in the art at the

time of the invention was made to allow the use of time-slots with a multiplexer, taught

by Goertz, for use in a SDH/SONET network, taught by Saleh, for the purpose of

increasing optimal paths betweens nodes and enabling faster communications to

prevent time related delays in the invention taught by Zinin et al, in view of Houston et

al.

Claims 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinin

et al (US Pat 6,820,134), in view of Houston et al (US Pub 2003/0126284), in futher

view of Goertz (US Pat 4,755,991), and in further view of Jones et al (US Pat

4,633,246).

Consider **Claim 9**, Zinin et al, in view of Houston et al, fails to disclose method of

claim 7, Step d3 further comprising: if the protection of 1:1 type is required, calculating

the protection path based on the MSP protection ring or MSP protection link, wherein the nodes which can be put on TENT may be the nodes on the MSP protection ring or MSP protection link; and when passing through the protection ring, putting all the nodes that satisfy service constraint conditions and protection requirements on the protection ring on TENT.

But, Zinin et al, in view of Houston et al does disclose the use of TENTS (Houston et al, Page 4-Page 5 [0051]).

Nonethless, Jones et al teaches the step Step d3 further comprising: if the protection of 1:1 type is required (Jones et al, Col 1 Lines 65-68, Col 2 Lines 1-3).

And, Goertz discloses the calculating the protection path based on the MSP protection ring or MSP protection link ring (Goertz, Col 1, Lines 65-68, Col 2 Lines 1-5), wherein the nodes, which can be put on TENT, may be the nodes on the MSP protection ring or MSP protection link ring (Goertz, Col 1, Lines 65-68, Col 2 Lines 1-5).

Therefore, it would be obvious to a person of ordinary skill in the art at the time of the invention was made to allow the use TENTS on the network, taught by Houston et al, to be used in conjunction with having 1:1 type network protection, taught by Jones et al, for calculating the protection path based on the multiplexer ring, taught by Goertz, in the invention taught by Zinin et al, for the purpose of increasing optimal paths betweens nodes and enabling faster communications to prevent time related delays.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Anish Sikri whose telephone number is 571-270-1783.

The examiner can normally be reached on 8am - 5pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anish Sikri

AS

June 20, 2007
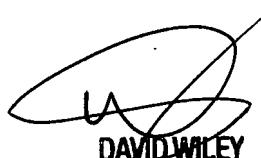
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